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SUBSTANTIATION OF THE NEED FOR ELEVATOR CAPACITY TO ENSURE THE SUSTAINABLE DEVELOPMENT OF AGRICULTURE

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Summary – The study analyzes the development of agriculture and crop production by determining the dynamics of the gross harvest of basic crops. The gross harvest of basic crops has been determined to increase by 41.87% in 2018 compared to 2014 and it makes the position of Ukraine, as a grain supplier leader of Black Sea Region and the "bread-basket of Europe", stronger from year to year. As a practical approach of the research, we evaluated the feasibility and cost-effectiveness of creating an elevator in the south of the Kyiv region with a capacity of 40 thousand tons of one-time storage of cereals, initial investment – USD 12 million, internal rate of return – 11%, payback period – 8 years.

Резюме – В статье анализируется развитие сельского хозяйства и растениеводства на основании определения динамики валового сбора основных сельскохозяйственных культур. Валовой сбор основных культур в 2018 году увеличился на 41,87% по сравнению с 2014 годом, что укрепляет позиции Украины как лидера по поставкам зерна в Черноморском регионе и «хлебной корзине Европы» из года в год. В качестве практического подхода исследования мы оценили целесообразность и экономическую эффективность создания элеватора на юге Киевской области мощностью 40 тысяч тонн для разового хранения зерновых, первоначальные инвестиции - 12 миллионов долларов США, внутренние норма прибыли - 11%, срок окупаемости - 8 лет.

Introduction. The current state of supply of domestic agriculture with elevator capacities is analyzed and their deficit is determined in all regions of Ukraine. The total storage capacity of grains at storages and processing enterprises in 2018 was about one third of the gross crop of basic crops (wheat, corn, grain, barley, rye, oats, buckwheat, millet, rice, soybeans, soybeans, soybeans, soybeans).

The peculiarities of grain transportation have been investigated and the main logistical problems of transportation by different modes of transport have been identified.

Main article. Ukraine is able to almost double increase in grain production (due to the increase in crop yields) and, accordingly, their export. However, the shortage of modern technological elevator capacity is one of the factors that not only hinder the development of the agricultural sector's potential, but may also weaken Ukraine's position on the world market in grain production and export in the near future.

The agro-industrial complex of Ukraine urgently needs the construction of 300-400 new technological elevators fairly geographically distributed (Table 1).

Total investment needed to develop new storage facilities and associated infrastructure is estimated at USD 4.5 to USD 8 billion [1].

The practical example of the use of the potential described above for the growth of elevator capacities is the "Elevator" Project (hereinafter Project) from Agricultural Service Cooperative "Agro Intelligent Technology", Code: 43245970. Considering the realities of Ukraine's logistics networks, e. g. availability of the train wagons, convenience of transport and accessibility to the Black Sea ports, the "Elevator" Project team determined that almost any land plot in the area of highway "Kyiv-Odesa" could be the relevant location for the project implementation, in our specific case it is the south of the Kyiv region. According to our calculations, the project is quite attractive: NPV (Net Present Value) is USD 6 070 846,83; ROI (Return on Investment) is 4.3%; IRR (Internal Rate of Return) is 11%; PP (Payback Period), is 8 years.

Growth of the agricultural sector requires affordable and sizable financing. According to the researche [2] in the recent years, economic growth of Ukraine has become critically dependent on the agricultural sector's prospects. In 2010-2016, the industrial share in the country's GDP dropped from 31.3% to 26.3% (down 5 p.p.), while the agriculture's contribution grew from 8.3% to 14.4% (up 6 p.p.). Over the three years (2014-2016), the export share of agricultural produce expanded from 31% to 42.5% (up 11.5%!). According to preliminary assessment, the agricultural sector accounted for almost one-third (28%) of currency receipts in 2016.

We agree with the estimates [3] that the key sectors of agribusiness growth in the next 10 years are infrastructure and IT. However, to improve the investment climate of Ukrainian agro in general and elevator capacity in particular, we propose a number of measures:

– support for the transparency of the privatization process;
– free tax regime for the profit which goes on refinancing of business;
– ensuring the maximum level of cashless payments in the industry;
– developing and implementing a code of business ethics or a code of ethics for corporate governance for all market participants, with a focus on the priority of long-term cooperation rather than short-term benefits;
– state support of crowdfunding mechanism for attracting public funds for investment operations;
– promoting the development of an efficient banking system focused on lending to the real sector of the economy;
– development of the insurance market.

Table 1 – TOP-15 regions of Ukraine for the investment needs in the construction of elevators*

№	Region	Investment needs, mln USD	Gross grain harvest in 2017, mln tons	Number of elevators	Total storage capacity, mln tons	Storage capacity deficit	
						mln tons	%
1	Kharkiv	300-425	4,96	73	2,460	2,5	50,4
2	Chernihiv	288-408	4,40	60	1,970	2,4	54,5
3	Vinnytsia	286-391	5,50	80	3,200	2,3	41,8
4	Sumy	252-357	4,20	50	2,100	2,1	50,0
5	Dnipro	240-340	4,80	74	2,800	2,0	41,7
6	Zaporizhzhia	228-323	3,80	49	1,900	1,9	50,0
7	Donetsk	168-238	2,40	29	0,977	1,4	58,3
8	Ternopil	156-221	2,90	47	1,600	1,3	44,8
9	Volyn	144-204	1,70	21	0,496	1,2	70,6
10	Zhytomyr	144-204	2,20	36	1,000	1,2	54,5
11	Cherkasy	132-187	3,40	52	2,250	1,1	32,4
12	Kherson	132-187	3,00	54	1,870	1,1	36,7
13	Khmelnytsk	132-187	3,80	63	2,700	1,1	28,9
14	Kyiv	132-187	3,10	49	2,000	1,1	35,5
15	Lviv	108-153	1,50	27	0,612	0,9	60,0
Average Storage capacity deficit in Ukraine:							47,3

Source: compiled from http://landlord.ua/

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Conclusion. Having analyzed the current state of supply of domestic agriculture with elevator capacities, their deficit and the level of coverage of the gross harvest of basic crops by the capacity of elevators were determined. Regions with a low level of total simultaneous storage capacities and a low level of coverage of elevator capacities include Zakarpattia, Lviv, and Chernivtsi regions. The counterpart to these regions is regions with a high level of total storage capacity and maximum coverage of gross fees: Kropyvnytskyi, Odesa, Poltava, Mykolaiv regions. Regions with a low level of total simultaneous storage capacity and lower than average coverage of gross fees include: Volyn, Donetsk, Zhytomyr, Ivano-Frankivsk, Kyiv, Lugansk, Rivne, Ternopil, Khmelnytsky, Chernihiv regions. The regions with a high level of general storage capacity and high coverage of gross fees include: Vinnytsia, Sumy, Kharkiv, Cherkasy, Dnipro, Zaporizhia, Kherson regions.

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